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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/963,688	09/27/2001	Kirsi Maansaari (nee: Savola)	P 283703 2000852US/HS/HER	8995
909	7590	04/17/2006	EXAMINER PHAN, MAN U	
PILLSBURY WINTHROP SHAW PITTMAN, LLP P.O. BOX 10500 MCLEAN, VA 22102			ART UNIT 2616	PAPER NUMBER

DATE MAILED: 04/17/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/963,688

Applicant(s)

MAANSAARI (NEE: SAVOLA) ET AL.

Examiner

Man Phan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 25 January 2006.
- 2a) ☒ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4, 7-10, 12-20, 22-26, 28 and 30-33 is/are rejected.
- 7) ☒ Claim(s) 5, 6, 11, 21, 27 and 29 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

Response to Amendment and Argument

1. This communication is in response to applicant's 01/25/2006 response in the application of Maansaari et al. for the "Changing of channel capabilities" filed 09/27/2001 has been examined. This application claims Foreign Priority based on the application 20002124 filed September 27, 2000 in Finland. The amendment and response has been entered and made of record. Claims 1-3, 8-9, 19-20, 25 and 32-33 have been amended. Claims 1-33 are pending in the application.

The rejection of record with respect to claims under 35 U.S.C. 112, second paragraph are hereby removed based on applicant's amendment.

2. Applicant's amendment and argument to the rejected claims are insufficient to distinguish the claimed invention from the cited prior arts or overcome the rejection of said claims under 35 U.S.C. 103 as discussed below. Applicant's argument with respect to the pending claims have been fully considered, but they are not persuasive for at least the following reasons.

3. In response to applicant's argument that the combination of Kennedy et al. (US#5,903,603), Duault et al. (US#5,638,365) and Chen (US#6,553,423) fails to disclose, teach or suggest all the features recited in the rejected claims. It's the examiner's position that the reference is applied herein for the teaching of a novel method and system for controlling the capabilities of a channel allocated to a connection. Kennedy et al. (US#5,903,603) discloses in Fig. 5 a simplified block diagram illustrated the IWFs connection in a telecommunications

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system, in which to establish an end-to-end communication channel, the internal modem of IWF 538 must train with the internal modem of remote analog terminal 552 to adaptively equalize the line and set near and far echo taps for echo cancellation. This is all performed digitally within the internal modems as part of the modem training task. Near the beginning of the modem training procedure, capabilities messages may be exchanged between internal modems so that the internal modems determine a desired data rate. For some modes of operation, capabilities messages need not be exchanged. Use of IWF 538 allows an end-to-end communication channel to be established between local digital terminal 510 and remote analog terminal 552 despite differences in delay associate with these two types of terminals, without violating timing constraints associated with established protocols for modem training or capabilities message exchange (Col. 7, lines 34 plus and Col. 13, lines 1 plus). Fig. 2 further shows the timing of modem training messages exchanged between local digital terminal 110 and remote analog terminal 152 for an operative configuration of conventional communication system 101. Capabilities messages 220, 225 are exchanged by local digital terminal 110 and remote analog terminal 152 indicating the "capabilities" of each terminal's internal modem. The exchanged capabilities messages 220, 225 are interpreted according to a predetermined hierarchy to arrive at negotiated parameters (e.g., data rate, etc.) which determine how further communications will be handled. Capabilities messages 220, 225 contain information the terminals use to select a common mode of operation (e.g., a negotiated data rate of 4800 bits per second) (*the IWFs are arranged to exchange the channel capability messages of the channel allocated to the connection into the desired one*) (See also Fig. 10; the Abstract and Col. 2, lines 27 plus). In the same field of endeavor, Dua discloses method dynamically changes the bit rate or bandwidth of constant bit

rate data structures in an Asynchronous Transfer Mode (ATM) communications environment. The method defines within a data channel a Change indicator (CI) indicative of an end user's request for a bit rate change within said data structures. The Change Indicator is continuously transmitted from a source side to a destination side in the ATM environment, along with the data structures on said data channel. Upon receipt at the destination side of a user's request of a bit rate change, the destination side modifies the value of said Change Indicator. The source side, acknowledges the modification of the value of the Change Indicator, whereby the transmission of data structures continues on the data channel with a new constant bit rate (*changing the channel capability of the channel allocated to the connection into the desired bit rate*) (See Fig. 5, the Abstract and Col. 5, lines 47 plus, Col. 10, lines 38 plus). Furthermore, Chen (US#6,553,423) discloses a Method and apparatus for dynamic exchange of capabilities between adjacent/ neighboring networks nodes, in which a new dynamic capability parameter is provided that enables a router to announce a new capability, or revise or remove a previously announced capability, to a neighboring router when a peer connection is established between the routers. Once announced, the dynamic capability parameter facilitates graceful capability changes between neighboring routers by allowing the routers to exchange a novel capability message. In the illustrative embodiment, the capability message includes, inter alia, a capability action code that has the following defined values: (1) announce (i.e., add) a new capability; (2) replace a previous announced capability; and (3) withdraw (i.e., delete) a previously announced capability (Scol. 3, lines 10 plus and Col. 7, lines 8 plus). Therefore, the Examiner maintains that the references cited and applied in the last office actions for the rejection of the claims are maintained in this office action.

Claim Rejections - 35 USC ' 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

6. Claims 1-4, 7-10, 16-18 and 19, 20, 22-26, 28, 30-33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (US#5,903,603) in view of Duault et al. (US#5,638,365).

With respect to claims 8, 16, 18 and 19, 23, 24 and 25, 30, 31 and 32, 33 Kennedy et al. (US#5,903,603) and Duault et al. (US#5,638,365) disclose a novel system and method for

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controlling the capabilities of a channel allocated to a connection, according to the essential features of the claims. Kennedy et al. (US#5,903,603) discloses in Fig. 5 a simplified block diagrams illustrated a telecommunication system (501) for transferring data between end users of the system (510, 532). To establish an end-to-end communication channel, the internal modem of IWF 538 must train with the internal modem of remote analog terminal 552 to adaptively equalize the line and set near and far echo taps for echo cancellation. This is all performed digitally within the internal modems as part of the modem training task (*the IWFs being arranged to allocate a channel for the connection between end users*). Near the beginning of the modem training procedure, capabilities messages may be exchanged between internal modems so that the internal modems determine a desired data rate (*detect a need for change in the channel capability, and indicates the desired capability change*). For some modes of operation, capabilities messages need not be exchanged. Use of IWF 538 allows an end-to-end communication channel to be established between local digital terminal 510 and remote analog terminal 552 despite differences in delay associate with these two types of terminals, without violating timing constraints associated with established protocols for modem training or capabilities message exchange (Col. 7, lines 34 plus and Col. 12, lines 55 plus). Kennedy further teaches in Figs. 6-8 the timing and flow diagrams of IWF modem training and capabilities message exchange, in which Local capabilities message 605 has digital channel bandwidth information. Therefore, for successful modem training between IWF 538 and remote analog terminal 552, IWF 538 must use the local signaling capabilities contained in local capabilities message 605 during the modem training procedure with remote analog terminal 552. In accordance with the present invention, IWF 538's internal modem is capable of

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supporting equal or higher bit rates than the digital channel. Local digital terminal 510 transmits local capabilities message 605 (referred to also as LCM) to IWF 538 beginning at time 630. Transmission of local capabilities message 605 occurs prior to the modem training procedure (e.g., as soon as local digital terminal 510 goes off-hook). IWF 538 receives local capabilities message 605 beginning at time 635. Receipt of local capabilities message 605 "pre-stages" IWF 538 for subsequent modem training with remote analog terminal 552. Capabilities messages 606, 625 are exchanged between IWF 538 and remote analog terminal 552.

Reformatted local capabilities message 606 (referred to also as LCM') represents a reformatted version of local capabilities message 605 received by IWF 538 at time 635. Remote analog capabilities message 625 (referred to also as RCM) transmitted by remote analog terminal 552 indicates the modem capabilities of remote analog terminal 552. Capabilities messages 606, 625 contain information which IWF 538 and remote analog terminal 552 use to select a common mode of operation (e.g., 4800 bit per second, secure data mode). IWF 538 transmits reformatted local capabilities message 606 beginning at time 675. Remote analog terminal 552 receives reformatted local capabilities message 606 beginning at time 680 (Col. 8, lines 5 plus).

However, Kennedy does not disclose expressly the first and the second interworking functions are arranged to change the channel capability into the desired one. In the same field of endeavor, Duault et al. (US#5,638,365) teaches in Figs 10 & 11 flow diagrams illustrated the function location between signaling entities performing control functions and data transfer, in which the first and second IWFs (Fig. 5) are arranged to change the channel capability into the desired one (Col. 7, lines 57 plus).

Regarding claims 9, 10 and 20, 22 and 26, 28, Duault further teaches in Figs. 14 & 15 depicts a scenario to change a data structure in case of a contention between source side and destination side, in which at the step 2, Signalling source sends the message "Be.sub.-- Prepared.sub.-- To.sub.-- Receive" to AAL Type 1 source to specify the new structure that it will receive when CI will be inverted. Step 3. Signalling destination sends the message "Be.sub.-- Prepared.sub.-- To.sub.-- Receive" to AAL Type 1 destination to specify the new structure that it will receive when CI will be inverted. Step 4. Signalling source sends the message "Change.sub.-- Structure" to Signalling destination and specifies the new structure. Step 5. Signalling destination sends the message "Change.sub.-- Structure" to Signalling source and specifies the new structure (Col. 9, lines 27 plus).

Regarding claims 1-4, 7, they are method claims corresponding to the system claims 8-10, 19, 20, 22-26, 28, 30-33 above. Therefore, claims 8-9 are analyzed and rejected as previously discussed with respect to claims 8-10, 19, 20, 22-26, 28, 30-33.

Regarding claim 17, The Emulated Loop Control Protocol (ELCP) is defined for ISDN PRI port management and AAL2 Channel allocation/de-allocation. The messages used for PRI ELCP are enhanced modifications of messages described in af-vmoa-0145 ATM Forum specification. (see reference 1). The ELCP messages are sent on CID 8 with UI=26-27 using Framed Mode data with SSSAR and SSTED. ELCP (Emulated Loop Control Protocol) defined in LES specifications allows exchange of channel allocation messages and user port control messages between an interworking function CP-IWF in an access device of the end-user and an interworking function CO-IWF in a gateway at the other end of the ATM network. Based on

the messages for call setup and release, the CO-IWF will seize or release the necessary ARL2 channels using ELCP.

One skilled in the art would have recognized the need for facilitating the exchange of channel allocation messages between IWFs, and would have applied Duault's teaching of the dynamically changing the length of a structure data transfer in ATM network into Kennedy's novel use of the modem training and capabilities message exchange. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Duault's dynamically structure data transfer mechanism in an ATM network into Kennedy's modem training apparatus and method with the motivation being to provide a method and system for controlling the capabilities of a channel allocated to a connection.

7. Claims 12-15 are rejected under 35 U.S.C. 103(a) as being unpatentable over Kennedy et al. (US#5,903,603) in view of Duault et al. (US#5,638,365) as applied to the claims above, and further in view of Chen (US#6,553,423).

With respect to claims 12-15, Kennedy et al. (US#5,903,603) and Duault et al. (US#5,638,365) disclose the claimed limitations discussed in paragraph 6 above. However, these claims differ from the claims above in that the claims require the feature wherein the first IWF is arranged to detect the necessary change on the basis of the information received from another entity of the system; by listening to the channel allocated to the connection. In the same field of endeavor, Chen (US#6,553,423) discloses a technique to dynamically exchange or update routing capabilities between neighboring peer routers in a computer network without disruption to the operation of the routers. A dynamic capability parameter in an Open message

of a Border Gateway Protocol (BGP) enables a router to announce a new capability, or revise or remove a previously announced capability, to a neighboring router when a peer connection is established between the routers. Once announced, the dynamic capability allows the router to exchange a capability message containing updates of capabilities without the need for resetting the existing peer connection. As a result, the technique allows non-disruptive configuration and enabling of capabilities in a manner that improves network stability, while reducing interruption of network services (Col. 3, lines 10 plus and Col. 7, lines 7 plus).

One skilled in the art would have recognized the need for facilitating the exchange of channel allocation messages between IWFs, and would have applied Chen's exchanging or updating routing capabilities between routers, and Duault's teaching of the dynamically changing the length of a structure data transfer in ATM network into Kenneday's novel use of the modem training and capabilities message exchange. Therefore, It would have been obvious to a person of ordinary skill in the art at the time of the invention was made to apply Chen's method and apparatus for dynamic exchange of capabilities between adjacent/neighboring networks nodes, and Duault's dynamically structure data transfer mechanism in an ATM network into Kennedy's modem training apparatus and method with the motivation being to provide a method and system for controlling the capabilities of a channel allocated to a connection.

Allowable Subject Matter

8. Claims 5-6, 11, 21 and 27, 29 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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The following is an examiner's statement of reasons for the indication of allowable subject matter: The closest prior art of record fails to disclose or suggest wherein the first IWF is arranged to check in response to the reception of the second message, whether the desired capability change can be performed, and if the capability can be changed into the desired one, to change the capability into the desired one and to transmit to the second IWF a third message which indicates that the desired capability change can be performed at the first end, and the second IWF is arranged to change the capability into the desired one in response to the reception of the third message; wherein in response to a third message received from the second IWF, which third message indicates that the second IWF cannot change the channel capability into the desired one, the first IWF is arranged to modify the desired change and to transmit a new first message, which indicates the result of the modification as the desired change, as specifically recited in claims.

Conclusion

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Fjortoft et al. (US#6,542,521) discloses a method for improving service level selection in a communication network system.

Ohyoshi et al. (US#6,118,759) discloses a network system and frame relay switch.

St-Amand et al. (US#6,526,063) discloses a system and method for ATM-FR interworking of SVC signaling.

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Allen, Jr. et al. (US#6,169,735) discloses a ATM-based distributed virtual tandem switching system.

Allen, Jr. et al. (US#6,219,348) discloses a ATM-based distributed virtual tandem switching system.

Allen, Jr. et al. (US#6,345,048) discloses a ATM-based distributed virtual tandem switching system.

Allen, Jr. et al. (US#6,765,903) discloses a ATM-based distributed virtual tandem switching system.

Bi et al. (US#6,757,278) discloses a secure ATM-based distributed virtual tandem switching system and method.

OH et al. (US#2002/0068609) discloses a wireless data transport method and mobile terminal and interworking function device therefor.

Kawaguchi (US#6,714,532) discloses a network connecting method and device.

10. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION THIS ACTION IS MADE FINAL**. See MPEP ' 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR

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1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

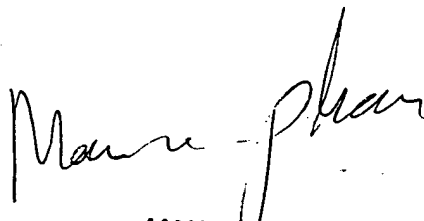
11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to M. Phan whose telephone number is (571) 272-3149.

The examiner can normally be reached on Mon - Fri from 6:00 to 3:00 EST. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin, can be reached on (571) 272-3134. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have any questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at toll free 1-866-217-9197.

Mphan

04/13/2006.


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PRIMARY EXAMINER